IFC International Finance Corporation

GSMA Green Power for Mobile

In partnership with the Netherlands

GREEN POWER FOR MOBILE TELECOMS

OUTSOURCING POWER NEEDS TO AN ESCO

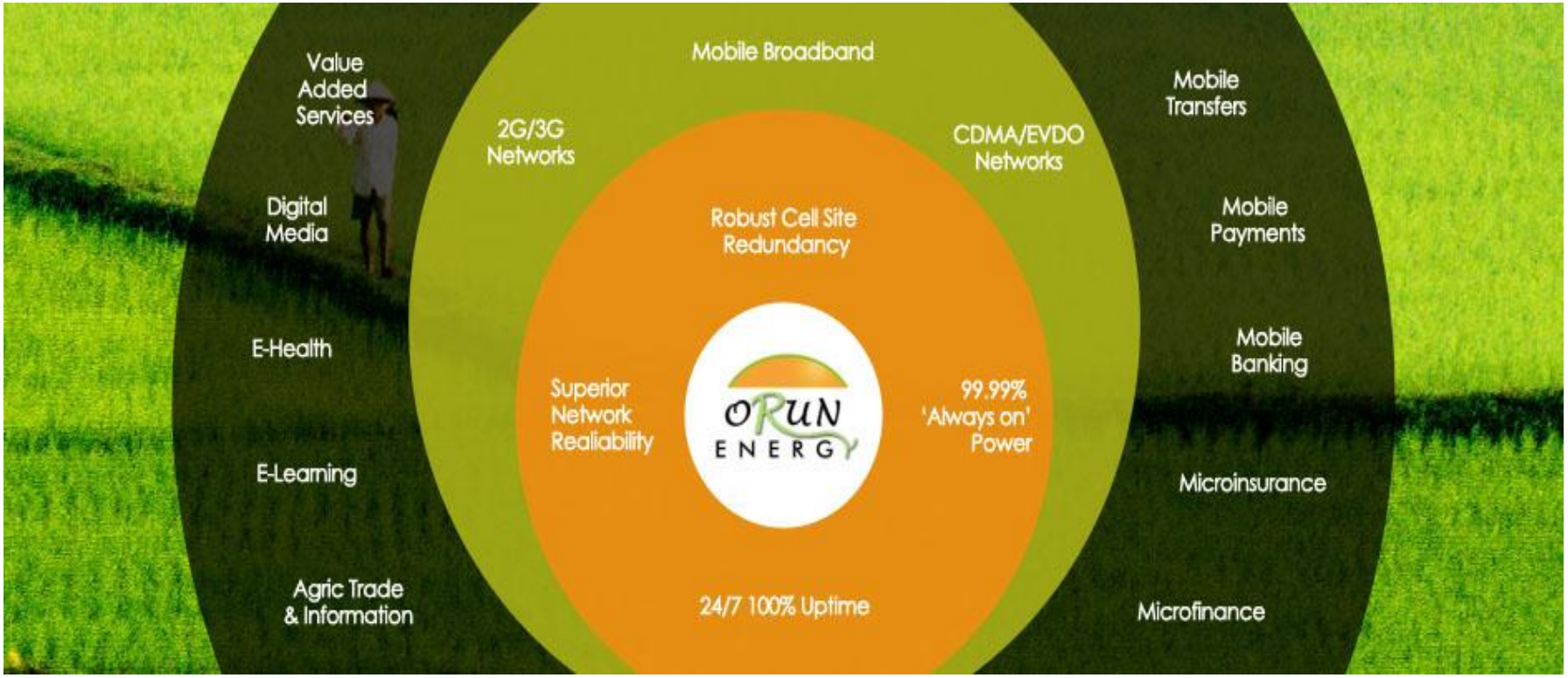
IS EAST AFRICA TELECOMS READY FOR THE ESCO MODEL?

May 2013

ORUN ENERGY

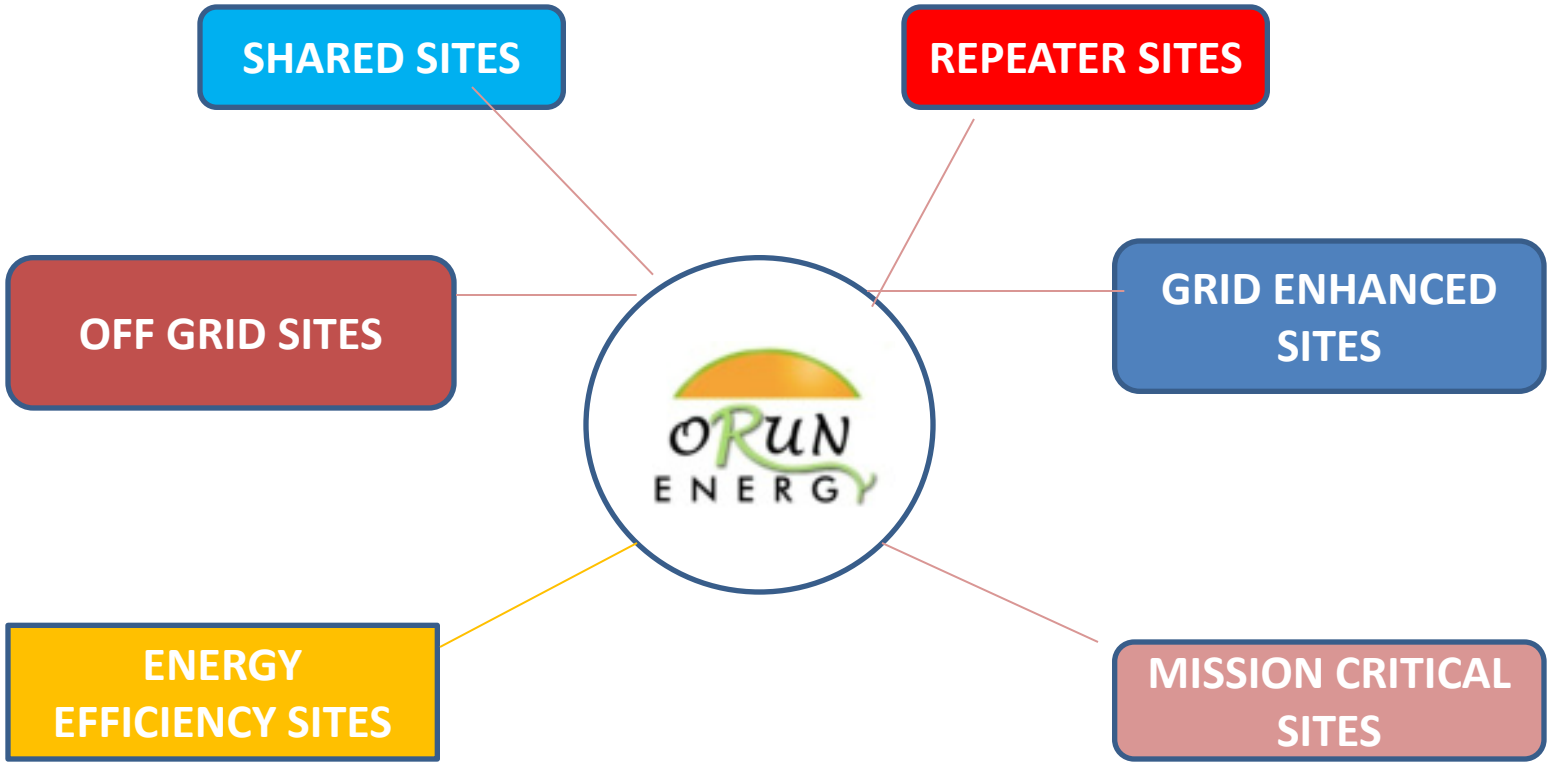
Powering the next one billion mobile connections

The Emerging Mobile Ecosystem in Africa



Orun Energy: Vision and Product Suite

Orun Energy's vision is to be the global leader in low cost high performance hybrid power systems for the wireless telecoms and critical communications market.



The graphic above describes Orun Energy solutions for the global telecoms industry

East Africa Telecom Sector Dynamics

- *Highly Competitive Telecom sector*
- *ARPUs trending lower - $3.00 by 2014*
- *QOS is a major Challenge*
- *Telcos slow adoption of power outsourcing/co-location*
- *Grid Power Infrastructure remains challenging*
- *Diesel price remains high $1.35- $1.90 per litre*
- *Mobile Number Portability a Game Changer?*

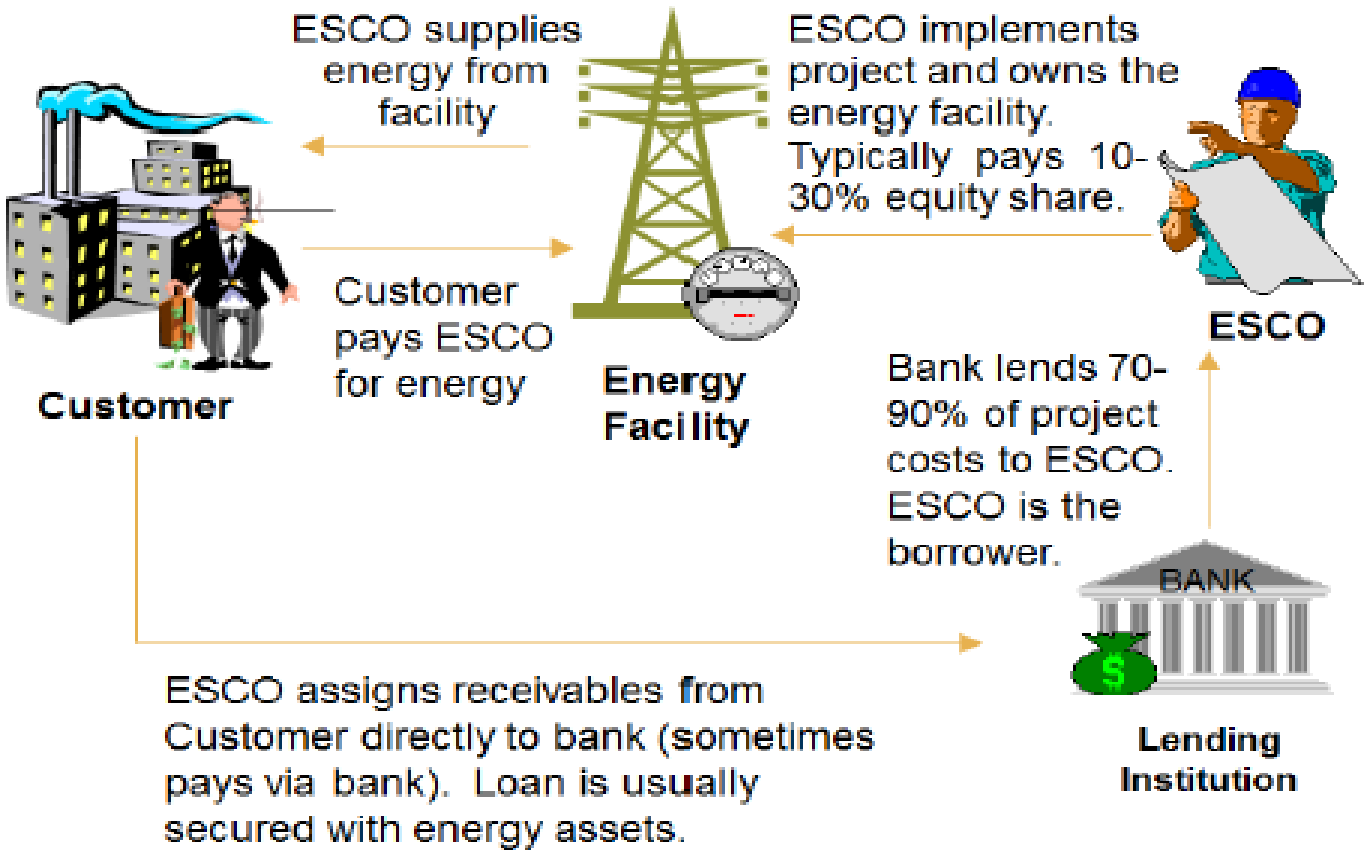
The Energy Challenge in East Africa Telecoms

- *Total spend on diesel in 2011 in excess of $400 million*
- *Industry cost per kw/hr between $2.8 - $3.8*
- *Grid infrastructure capex for Rural East Africa a challenge*
- *Frequent Replacement of Generators over 10 year period*
- **Rural population 87 % in Uganda and 74 %in Tanzania**
- *Diesel price remains high: $1.35 - $1.90 per litre*
- *Dual genset approach is highly inefficient*

East Africa: Electricity Penetration and Cost of Energy

COUNTRIES	NO OF TOWERS	MOBILE PENETRATION	ELEC TRICITY PENETRATION	COST OF DIESEL/LITRE	ARPU
KENYA	5600	74%	71/12%	$1.35	$3.80
UGANDA	3200	42%	50/5%	$1.45	$3.20
TANZANIA	4700	62%	40/2%	$1.55	$3.10
RWANDA	1200	58%	12%	$1.80	$2.90
SOUTH SUDAN	600	15%	1%	$1.60	$8.90
ETHIOPIA	4,500	26%	15%	$1.10	$3.30
BURUNDI	700	24%	2%	$1.80	$2.50
DRC	900	17%	7%	$1.40	$5.80

What is an ESCO?



The Esco Model in Telecoms is a Managed "Energy" Services Contract

ESCO Financing Mechanisms

Equity	- equity investment can take the form of an ESCO issuing additional shares in the company's common ownership. Promoters will suffer dilution from this process
Mezzanine Finance	- is capital that sits between senior debt and equity and has features of both kinds of financing. Subordination refers to the order or priority of repayments
Project Finance	- most commonly non-recourse loans, which are secured by the project assets and paid entirely from project cash flow, rather than from the general assets or creditworthiness of the project sponsors
Risk Guarantees	- provide collateral from external partners for part of the debt of projects. Guarantees thus can address the credit risk barrier common in many EE market segments
Carbon Finance	- refers to the purchase of project-based greenhouse gas emission reductions. Carbon finance provides additional revenues to the project

The ESCO Model in Telecoms Outsourcing

Mobile Network Operators are currently evolving models to outsource the power generation for telecom sites in emerging markets.

The concept of an Energy Service Company (ESCO) has been introduced to the Indian Telecoms industry to facilitate the outsourcing model with clear rules and guidelines provided by the Telecoms Regulator.

Other markets such as Nigeria, Bangladesh and Tanzania are also looking to introduce the Esco Model

Different Outsourcing opex models include the following:

- **Operating lease or monthly flat fee outsourcing model.**
- **Power Purchase Agreement (PPA) model.**
- **OPEX saving recovery or Energy Savings Agreement (ESA) model**

Key Drivers – The Esco Model

CAPEX (ZERO)	Hybrid Power and Renewable Energy Solutions are typically 2 to 3 times the cost of conventional power solutions. This imposes a high capex burden for solutions that can be financed off the balance sheet
COMPETITION	Increasing competition amongst telcos is resulting in the adoption of new business models (the Esco Model) which allow opcosand towercos to outsource a none core function such as the provision of 24/7 power
COMPLIANCE	Govt & NGOs are putting operators under increasing pressure to report carbon emission reductions in the network . Outsourcing power needs to Escos enable operators meet compliance & reporting standards
COMMUNITY	Communities are increasingly aware of the impact of climate change on the environment and are putting pressure on telcos and towercos to adopt better environmental practices
COST SAVINGS	By outsourcing to an Esco, operators gain from guaranteed savings in the form of lower monthly fixed energy costs or lower price per Kwh by as much as 30 – 40%.. Over 5 - 8 years, the savings potential can be very significant.

Responsibility Matrix: Capex/Opex Comparison

ACTIVITY	CAPEX MODEL	OPEX MODEL
Energy Equipment Purchase (New & Retrofit)	Operator	Esco
Rollout and Project Management	Operator	Esco
Risk related to rollout	Operator	Esco
Site Maintenance & Operation	Operator	Esco
Assurance of Site Uptime	Operator	Esco
Equipment Monitoring & Security	Operator	Esco
Remote Alarms and Performance Data	Operator	Esco
Risk of Theft and Vandalism	Operator	Esco

Key Success Factors: Esco Outsourcing & Management

A Partnership Mindset

Thorough Evaluation of Esco Technology

A Thorough Test Regime and Test Analysis

Robust Remote Monitoring Tools

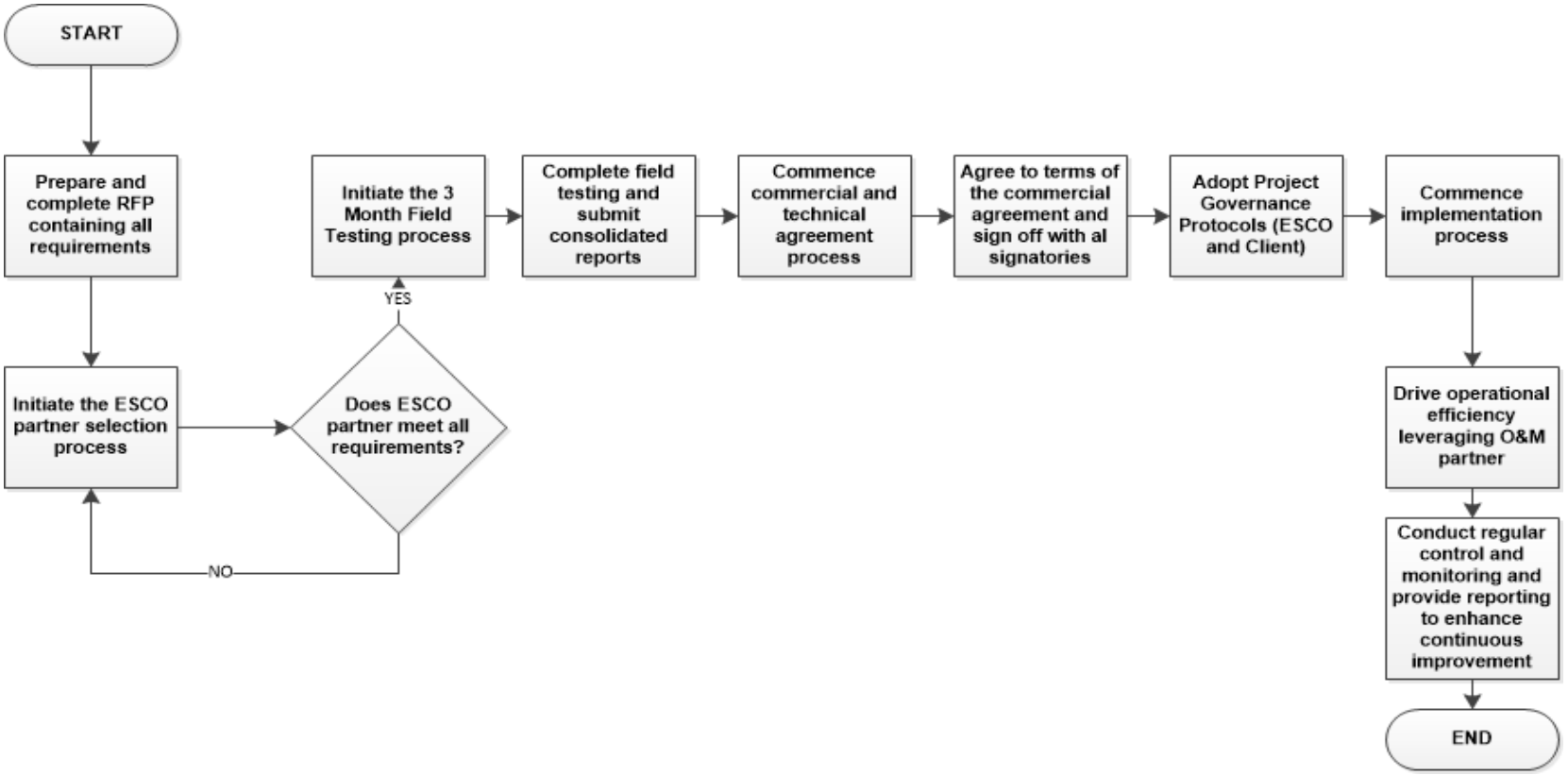
Transparency in Reporting

A Willingness to Compromise

Commitment to Project Governance and Communication

Key Success Factors: Esco Outsourcing & Management

Below are the steps an Operator or Towerco should follow to outsource power:



Esco for Telecoms; Benefits to Operators & Towercos

Financial

- Eliminate the Capex burden
- Predictable opex savings
- Carbon Credit arrangements

Eliminate Replacement Costs

Immediate payback

Technical

- Benefit from New Technologies
- Reduce Risk of Obsolescence
- Improve on cooling efficiency

Modularity of Components

Operational - 24/7 Monitoring Benefit

- Project Governance
- Equipment performance
- Shelter Temperatures

Enhanced Transparency

Improved Reporting

Thank You

Q&A